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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/615,045	07/12/2000	Shinichiro Ueno	PADE:047	3322

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EXAMINER

BROWN, VERNAL U

ART UNIT	PAPER NUMBER
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2635

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DATE MAILED: 04/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/615,045

Applicant(s)

SHINICHIRO UENO

Examiner

Vernal U Brown

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-70 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,52,54,56 and 59 is/are rejected.
- 7) ☒ Claim(s) 2-51,53,55,57,58 and 60-70 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

The application of Shinichiro Ueno for Mobile Body discrimination apparatus for rapidly acquiring respective data sets transmitted through modulation of reflected wave has been examined. Claims 1-70 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over MacLellan et al. U.S Patent 5940006 in view of Kruest U.S patent 5963144 and further in view of Marsh et al. U.S Patent 5537105 .

Regarding claim 1, MacLellan et al. teaches a mobile body discrimination apparatus comprising a plurality of transponders and an interrogator apparatus (figure 1), said interrogator apparatus (101) having: at least one antenna (figure 1); control means (1001); transmitting means controlled by said control means (figure 11) for driving said antenna to periodically transmit a transmission start command code conveyed by modulated radio waves, directed at respective ones of said transponders which are currently within a communication region of said antenna (col. 3 lines 65-67), and for transmitting CW (continuous-wave) radio waves in intervals between transmissions of said transmission start command code (col. 1 lines 40-45, col. 14 lines 60-63); receiving means (1104) coupled to said antenna (figure 11), for obtaining said requested

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signals from said transponders, conveyed by modulated reflected radio waves from said transponders which are within said communication region (col. 15 line 63-col. 16 line 5).

MacLellan et al. teaches each of the transponder comprises receiving means (901) coupled to said antenna (antenna of interrogator), for obtaining the transmission start command code from said modulated radio waves transmitted by said interrogator apparatus (figure 1); modulator means controllable for varying a reflection condition of said antenna with respect to incident radio waves (col. 14 line 66- col. 15 line 22) and the reflected wave from the transponder include data store in the memory of the transponder (col. 9 lines 41-45). MacLellan et al. is however silent on teaching rectifier circuit means coupled to said antenna, for converting a signal received by said antenna to a supply of electrical power for operating respective circuits of said transponder and response timing control means for controlling the modulator means comprising means for setting a randomly determined value of delay time at each reception of the transmission start command. Kruest in an art related in an art related radio frequency device teaches rectifier circuit means (18) coupled to said antenna, for converting a signal received by said antenna to a supply of electrical power for operating respective circuits of the transponder (col. 5 lines 28-31) but is also silent on teaching response timing control means for setting a randomly determined value of delay time at each reception of the transmission start command. Marsh et al. in an art related radio frequency device teaches response timing control means for setting a randomly determined value of delay time at each reception of the transmission start command (col. 6 lines 39-45, col. 6 lines 8-10) in order to limit or mitigate the interference between the transponders.

It would have been obvious to one of ordinary skill in the art to have a rectifier circuit means coupled to said antenna, for converting a signal received by said antenna to a supply of electrical power for operating respective circuits of said transponder and response timing control means for controlling the modulator means comprising means for setting a randomly determined value of delay time at each reception of the transmission start command in MacLellan et al. as evidenced by Kruest in view of Marsh et al. because MacLellan et al. suggests responding to an interrogating signal by reflecting the received signal and Kruest in view of Marsh et al. teaches a rectifier circuit means coupled to said antenna, for converting a signal received by said antenna to a supply of electrical power for operating respective circuits of said transponder and response timing control means for controlling the modulator means comprising means for setting a randomly determined value of delay time at each reception of the transmission start command in order to derive power from the interrogating signal and to limit or mitigate the interference between the transponders.

Claim 52 is rejected under 35 U.S.C. 103(a) as being unpatentable over MacLellan et al. U.S Patent 5940006 in view of Kruest U.S patent 5963144 in view of Marsh et al. U.S Patent 5537105 and further in view of Beigel U.S Patent 5559507.

Regarding claim 52, MacLellan et al. teaches conveying modulated reflected radio waves from the transponders which are within the communication region to the interrogator(col. 15 line 63-col. 16 line 5) but is silent on teaching a rectifier circuit means coupled to antenna, for converting a signal received by the antenna to a supply of electrical power for operating respective circuits of the transponder and matching means for transferring the signal received

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by the antenna to an input terminal of the rectifier, and a low-pass filter for smoothing a rectified output voltage produced at an output terminal of rectifier element. Kruest in an art related in an art related radio frequency device teaches rectifier circuit means (18) coupled to said antenna, for converting a signal received by said antenna to a supply of electrical power for operating respective circuits of the transponder (col. 5 lines 28-31). Kruest also teaches impedance matching means for transferring the signal received to the rectifier and is optimize to control the absorption and reflection of the radio wave and therefore optimizing the degree of rectification (col. 4 lines 42-50). Kruest is also silent on teaching a low-pass filter for smoothing a rectified output voltage. One skilled in the art recognizes that a low-pass filter is conventionally used to for smoothing a rectified output voltage as evidenced by Beigel (col. 6 lines 65-67).

It would have been obvious to one of ordinary skill in the art to have a rectifier circuit means coupled to antenna, for converting a signal received by the antenna to a supply of electrical power for operating respective circuits of the transponder and impedance matching means for transferring the signal received by the antenna to an input terminal of the rectifier, and a low-pass filter for smoothing a rectified output voltage produced at an output terminal of rectifier element in MacLellan et al. as evidenced by Kruest in view of Marsh et al. in view of Beigel because MacLellan et al. suggests conveying modulated reflected radio waves from the transponders which require powering of the transponder circuitry and Kruest in view of Marsh et al. teaches impedance matching means for transferring the signal received to the rectifier and is optimize to control the absorption and reflection of the radio wave and therefore optimizing the degree of. One skilled in the art recognizes that a low-pass filter is conventionally used to for smoothing a rectified output voltage as evidenced by Beigel.

Claims 54 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacLellan et al. U.S Patent 5940006 in view of Kruest U.S patent 5963144 in view of Marsh et al. U.S Patent 5537105 in view of Beigel U.S Patent 5559507 and further in view of Chia et al. U.S patent 6140924.

Regarding claim 54, MacLellan et al. in view of Kruest in view of Marsh et al. in view of Beigel teaches the rectifier element is a diode (18) in figure 2 (U.S Patent 5963144) but is silent on teaching the impedance parameter is a value of inter-terminal capacitance of said diode, and said impedance adjustment element is an adjustable capacitor which is connected in parallel with said input and output terminals of said diode. Chia et al. in an art related rectifying circuit teaches the impedance parameter is a value of inter-terminal capacitance of said diode, and said impedance adjustment element is an adjustable capacitor which is connected in parallel with said input and output terminals of said diode (col. 3 lines 19-26) and the diode is connected in parallel between the impedance matching means and low-pass filter (figure 3).

It would have been obvious to one of ordinary skill in the art for the impedance parameter is a value of inter-terminal capacitance of the diode, and the impedance adjustment element is an adjustable capacitor in MacLellan et al. in view of Kruest in view of Marsh et al. as evidenced by Chia et al. because MacLellan et al. in view of Kruest suggests Marsh et al. in view of Beigel suggests the rectifier element is a diode and Chia et al. teaches the impedance parameter is a value of inter-terminal capacitance of said diode, and said impedance adjustment element is an adjustable capacitor which is connected in parallel with said input and output terminals of said diode.

Claim 59 is rejected under 35 U.S.C. 103(a) as being unpatentable over MacLellan et al. U.S Patent 5940006 in view of Kruest U.S patent 5963144 in view of Marsh et al. U.S Patent 5537105 in view of Beigel U.S Patent 5559507 and further in view of Geiszler et al. U.S Patent 5099227.

Regarding claim 59, MacLellan et al. in view of Kruest in view of Marsh et al. in view of Beigel teaches varying the impedance (col. 4 lines 42-50, (U.S Patent 5963144) and the rectifier element is a diode (18) in figure 2 (U.S Patent 5963144) but is silent on teaching impedance parameter is a value of internal series inductance of said diode, and said impedance adjustment element is an adjustable inductor which is connected in parallel with said input. One skilled in the art recognizes that the a variable inductor is conventionally used to alter the impedance of a circuit as evidenced by Geiszler et al. (figure 5).

It would have been obvious to one of ordinary skill in the art to parameter is a value of internal series inductance of said diode, and said impedance adjustment element is an adjustable inductor which is connected in parallel with said input in , MacLellan et al. in view of Kruest in view of Marsh et al. in view of Beigel as evidenced by Geiszler et al. because MacLellan et al. in view of Kruest in view of Marsh et al. in view of Beigel suggests varying the impedance for the purpose of impedance matching and one skilled in the art recognizes that the a variable inductor is conventionally used to alter the impedance of a circuit as evidenced by Geiszler et al.

Allowable Subject Matter

Claims 2-51, 53,55,57,58, and 60-70 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 2-13, the prior art of record fail to teach or suggests control means periodically interrupt the transmission of CW radio waves by the second transmitting means and second antenna, for the duration of each of respective time intervals in which the transmission of the start command code is transmitted by the first transmitting means and first antenna.

Regarding claims 14-34, the prior art of record fail to teach or suggests the first and second antenna transmit spread spectrum radio waves which have been generated using a first and second pseudo-noise code sequence.

Regarding claims 35-46, the prior art of record fail to teach or suggests a plurality of absorber elements for applying respectively different degrees of absorption of the radio waves reflected by the antenna and selection control means for generating a selection control signal which specifies an arbitrarily determined pair of the absorber elements.

Regarding claims 47-51, the prior art of record fail to teach or suggests transponders comprises a plurality of phase shifter elements for applying respectively different degrees of phase shift to said the waves which are reflected by the antenna and phase shifter selection control means to select a specific pair of said phase shifter elements each time that said response start command code is received.

Regarding claim 53, the prior art of record fail to teach or suggests rectifier circuit means comprises means for supplying a fixed-amplitude test to the impedance matching means.

Regarding claim 55, the prior art of record fail to teach or suggests the rectifying diode is connected in series with low-pass filter and impedance matching means.

Regarding claims 57- 58 and 60-64, the prior art of record fail to teach or suggests diode is implemented as a component of an integrated circuit chip, wherein the integrated circuit chip is mounted in flip-chip configuration on a substrate, and said adjustable capacitor is implemented by a first electrically conductive region which is formed on said substrate and a second electrically conductive region which is disposed above and adjacent to said first conductive region and is adapted to be moved towards said first electrically conductive region by displacement of said integrated circuit chip towards said substrate.

Regarding claims 65-70, the prior art of record fail to teach or suggests an integrated circuit with a first substrate with patterned connecting leads formed on an upper face thereof and an integrated circuit chip in bare chip condition, which constitutes respective internal circuits of the transponder and IC card comprising an antenna connecting lead formed as part of the patterned connecting leads.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vernal U Brown whose telephone number is 703-305-3864. The examiner can normally be reached on M-Th, 8:30 AM-6:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on 703-305-4704. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Vernal Brown
March 31, 2004

MICHAEL HORABIK
SUPERVISORY PATENT EXAMINER
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